

CLAIMS

1. A polishing pad comprising a fiber including organic fiber and a matrix resin holding the fiber, wherein at least the organic fiber is exposed on the work material-side surface thereof.

2. A polishing pad comprising a fiber including organic fiber and a matrix resin holding the fiber, wherein at least the organic fiber is exposed on the work material-side surface after dressing treatment.

3. The polishing pad according to Claim 1 or 2, wherein the matrix resin contains at least one thermoplastic resin.

4. The polishing pad according to any one of Claims 1 to 3, wherein the matrix resin is a semicrystalline thermoplastic resin.

5. The polishing pad according to any one of Claims 1 to 4, wherein an elastomer is dispersed in the matrix resin.

6. The polishing pad according to Claim 5, wherein the elastomer has a glass transition point of 0°C or less.

7. The polishing pad according to any one of Claims 1 to 6, wherein the fiber is an aromatic polyamide.

8. The polishing pad according to any one of Claims 1 to 7, wherein the polishing pad contains an inorganic fiber in an amount of 1 to 50 wt %.

9. The polishing pad according to any one of Claims 1 to 8, wherein the organic fiber has a diameter of 1 mm or less.

10. The polishing pad according to any one of Claims 1 to 9, wherein the organic fiber has a length of 1 cm or less.

11. The polishing pad according to any one of Claims 1 to

10, wherein polishing particles are held by the organic fiber exposed on the work material-side surface.

12. The polishing pad according to any one of Claims 1 to 11, wherein the maximum length of the exposed organic fiber is 0.1 mm or less.

13. The polishing pad according to Claim 12, wherein the exposed organic fiber is a polyester fiber.

14. The polishing pad according to Claim 12 or 13, wherein a chopped polyester fiber is dispersed in the matrix resin.

15. The polishing pad according to Claim 12 or 13, wherein a polyester nonwoven fabric is laminated in the matrix resin.

16. The polishing pad according to any one of Claims 1, 2 to 4, 7, and 9 to 11 that is useful for optical detection of the polishing end point during polishing of the work material surface, wherein the polishing pad contains a substantially non-foam matrix resin containing an organic fiber in an amount of 1 to 20 wt %, has the functions of transporting and retaining polishing slurry particles, and allows transmission of a light having a wavelength in the range of 190 to 3,500 nm.

17. The polishing pad according to any one of Claims 1, 2 to 4, 7, and 9 to 11 that is useful for optical detection of the polishing end point during polishing of the work material surface, wherein the polishing pad contains a region transmitting a light having a wavelength in the range of 190 to 3,500 nm that is made of a substantially non-foam matrix resin containing an organic fiber in an amount of 1 to 20 wt % and has the functions of transporting and retaining polishing slurry particles.

18. The polishing pad according to Claim 16 or 17, wherein

the organic fiber is an aramide fiber.

19. A method for producing a polishing pad for use as attached to a polishing table for flattening a work material's polishing plane, comprising a step of obtaining a mixture of a fiber including organic fiber and a matrix composition containing a thermoplastic resin by blending, a step of pelletizing or tabletizing the mixture, and a step of molding the pellet or tablet into a plate or a sheet shape by extrusion or injection molding.

20. A method for producing a polishing pad for use as attached to a polishing table for flattening a work material's polishing plane, comprising a step of impregnating a fibrous base material containing organic fiber with a matrix resin composition to form a fibrous resin-impregnated sheet-shaped base material, and a step of laminating fibrous sheet-shaped base materials including the fibrous resin-impregnated sheet-shaped base material and molding the laminate with heating and pressure.

21. The method for producing a polishing pad according to Claim 19 or 20, further including a step of exposing the fiber on the surface.

22. A polishing method for polishing a work material's polishing plane, comprising polishing a work material pressing the polishing plane of the work material to the organic fiber-exposed face of the polishing pad according to any one of Claims 1 to 18, and sliding the work material and the pad relatively while supplying a polishing slurry between the work material's polishing plane and the polishing pad.

23. The polishing method for polishing a work material's polishing plane according to Claim 22, wherein the work material's

polishing plane is a laminate of a conductor layer as well as a copper layer formed on an insulation layer having a dielectric constant of 2.7 or less on which wiring and trenches are formed.

24. A polishing method for detecting the polishing end point
5 optically by using the polishing pad according to any one of claims
16 to 18.